

LISTING OF THE CLAIMS

The following is a complete listing of claims with a status identifier in parenthesis.

LISTING OF CLAIMS

1-34. (Cancelled)

35. (Previously Presented) A method of moving nuclear fuel from a fuel pool with a graphical user interface, the method comprising:

inputting at least one fuel attribute into the graphical user interface;
graphically populating, by the graphical user interface, a graphical loading map with graphical fuel bundles,
the graphical fuel bundles representing fuel bundles in at least one fuel pool,

the graphical user interface populating the graphical loading map according to the input at least one fuel attribute and at least one corresponding attribute of the nuclear fuel bundles represented by the graphical fuel bundles,

the graphical user interface including one or more loading tools configured to graphically select, sort, filter, or move the graphical fuel bundles into the graphical loading map based on the at least one corresponding attribute of the fuel bundles represented by the graphical fuel bundles; and

physically placing the fuel bundles into a reactor core according to the populated graphical loading map.

36. (Previously Presented) The method of claim 35, wherein the graphical user interface further includes at least one fuel pool table and a reload table, and wherein the graphically populating includes graphically selecting, sorting, filtering, or moving the graphical fuel bundles within or among the graphical loading map, the at least one fuel pool table, and the reload table via the one or more loading tools, the selecting, sorting, filtering, and moving being based on the one or more fuel attributes of the fuel bundles represented by the graphical fuel bundles.

37. (Previously Presented) The method of claim 36, further comprising:
storing at least one fuel pool database, the fuel pool database including a fuel pool list of at least one of the fuel bundles residing in the fuel pool; and
graphically populating the at least one fuel pool table with a graphical representation of at least one of the fuel bundles on the fuel pool list.

38. (Previously Presented) The method of claim 36, wherein the graphical user interface further includes a fresh fuel table, and wherein the graphically populating includes graphically selecting, sorting, filtering, or moving the graphical fuel bundles within or among the loading map, the at least one fuel pool table, the reload table, and the fresh fuel table via the one or more loading tools, the selecting, sorting, filtering, and moving being based on the one or more fuel attributes of the fuel bundles represented by the graphical fuel bundles.

39. (Previously Presented) The method of claim 38, further comprising:
- storing at least one fresh fuel database, the fresh fuel database including a fresh fuel list of at least one of the fresh fuel bundles; and
- graphically populating the at least one fresh fuel table with a graphical representation of at least one of the fuel bundles on the fresh fuel list.
40. (Previously Presented) The method of claim 35, further comprising:
- analyzing the populated graphical loading map by simulating reactor performance with the populated graphical loading map, the analyzing performed before the physically placing the fuel bundles into the reactor core according to the populated graphical loading map.
41. (Previously Presented) The method of claim 35, wherein the one or more fuel attributes include at least one of exposure, a previous cycle in which the fuel bundle was used, k infinity, bundle product line, initial uranium loading, initial gadolinium loading, number of axial zones, historical fuel cycle numbers previous to a most recent for which the fuel bundle was used, a corresponding reactor core in which the fuel bundle was resident for each of the historical fuel cycles, accumulated residence time, and fuel bundle pedigree, which is a parameter that reflects usability of the fuel bundle for continued reactor operation.
42. (Previously Presented) A method of moving nuclear fuel from a fuel pool, the method comprising:

inputting at least one fuel attribute into the graphical user interface;
providing the graphical user interface including a graphical loading map
graphically representing fuel bundles in a reactor core;
one or more loading tools within the graphical user interface graphically
sorting, filtering, or moving graphical fuel bundles into the graphical loading
map, based on the at least one fuel attribute of the fuel bundles represented by
the graphical fuel bundles, at least one of the graphical fuel bundles
representing a fuel bundle in a fuel pool; and
physically placing the fuel bundles into the reactor core according to the
populated loading map.

43. (Previously Presented) The method of claim 42, wherein the graphical
user interface further includes at least one fuel pool table graphically
representing bundles in a fuel pool and a reload table, and wherein the method
further comprises:

graphically selecting, sorting, filtering, or moving the graphical fuel
bundles based on the one or more fuel attributes of the fuel bundles
represented by the graphical fuel bundles within or among the fuel pool table
and the reload table, wherein the graphically populating the loading map
includes graphically populating the loading map with graphical fuel bundles
moved into the reload table.

44. (Previously Presented) The method of claim 43, further comprising:

storing at least one fuel pool database, the fuel pool database including a fuel pool list of at least one of the fuel bundles residing in the fuel pool; and
graphically populating the at least one fuel pool table with a graphical representation of at least one of the fuel bundles on the fuel pool list.

45. (Previously Presented) The method of claim 43, wherein the graphical user interface further includes a fresh fuel table, and wherein the graphically populating includes graphically selecting, sorting, filtering, or moving the graphical fuel bundles within or among the graphical loading map, the at least one fuel pool table, the reload table, and the fresh fuel table via the one or more loading tools, the selecting, sorting, filtering, and moving being based on the one or more fuel attributes of the fuel bundles represented by the graphical fuel bundles.

46. (Previously Presented) The method of claim 44, further comprising:
storing at least one fresh fuel database, the fresh fuel database including a fresh fuel list of at least a portion of available fresh fuel bundles; and
graphically populating the at least one fresh fuel table with a graphical representation of at least one of the fresh fuel bundles on the fresh fuel list.

47. (Previously Presented) The method of claim 42, further comprising:
analyzing the populated graphical loading map by simulating reactor performance with the populated graphical loading map, the analyzing

performed before the physically placing the fuel bundles into the reactor core according to the populated graphical loading map.

48. (Previously Presented) The method of claim 42, wherein the one or more fuel attributes include at least one of exposure, a previous cycle in which the fuel bundle was used, k infinity, bundle product line, initial uranium loading, initial gadolinium loading, number of axial zones, historical fuel cycle numbers previous to a most recent for which the fuel bundle was used, a corresponding reactor core in which the fuel bundle was resident for each of the historical fuel cycles, accumulated residence time, and fuel bundle pedigree, which is a parameter that reflects usability of the fuel bundle for continued reactor operation.